

# Notice of Allowability

Application No.

09/691,583

Examiner

Travis M Reis

Applicant(s)

MCLACHLAN ET AL.

Art Unit

2859

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed 12/15/4 and interviews on 1/19/5 & 1/31/5.
2. ☒ The allowed claim(s) is/are 2-13 and 15-25.
3. ☒ The drawings filed on 18 October 2004 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All b) ☐ Some\* c) ☐ None of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

## Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

### EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in telephone interviews with Mr. Dougherty on 1/19/5 & 1/31/5.

The application has been amended as follows:

In claim 2, lines 1 & 2, "first three frequencies are due to" has been replaced with the following text ---circumferential---; in line 2, "with" has been replaced with the following text ---have---.

In claim 3, line 2, after "to" the following text has been inserted ---said circumferential---; "with" has been replaced with the following text ---having---; in line 3, after "to" the following text has been inserted ---circumferential---; "with" has been replaced with the following text ---having---.

In claim 4, lines 1-3, "the bell has a top portion, a side portion and a mouth, the side portion extending from the top portion to the mouth," has been ---deleted---; in line 3, "being" has been replaced with the following text ---is---.

In claim 5, lines 1-3, "the bell has a top portion, a side portion and a mouth, the side portion extending from the top portion to the mouth," has been ---deleted---; in line 3, "being" has been replaced with the following text ---is---.

In claim 6, lines 1-3, "the bell has a top portion, a side portion and a mouth, the side portion extending from the top portion to the mouth," has been ---deleted---; in line 3, "being" has been replaced with the following text ---is---.

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In claim 7, lines 1-3, "the bell has a top portion, a side portion and a mouth, the side portion extending from the top portion to the mouth," has been ---deleted---; in line 3, "being" has been replaced with the following text ---is---.

In claim 8, lines 1-3, "the bell has a top portion, a side portion and a mouth, the side portion extending from the top portion to the mouth," has been ---deleted---; in line 3, "consisting" has been replaced with the following text ---consists---.

In claim 9, lines 1-3, "the bell has a top portion, a side portion and a mouth, the side portion extending from the top portion to the mouth," has been ---deleted---; in line 3, "consisting" has been replaced with the following text ---consists---.

In claim 10, lines 1-3, "the bell has a top portion, a side portion and a mouth, the side portion extending from the top portion to the mouth," has been ---deleted---; in line 3, "consisting" has been replaced with the following text ---consists---.

In claim 11, lines 1-3, "the bell has a top portion, a side portion and a mouth, the side portion extending from the top portion to the mouth," has been ---deleted---; in line 3, "consisting" has been replaced with the following text ---consists---.

In claim 15, line 6, "comprising" has been replaced with the following text ---wherein said step of selecting the initial bell shape comprises---; in line 7 "shape optimization" has been replaced with the following text ---said optimization procedure---.

In claim 16, line 2, after "to" the following text has been inserted ---circumferential---; in line 3, after "to" the following text has been inserted ---circumferential---.

In claim 17, line 2, after "to" the following text has been inserted ---circumferential---.

In claim 24, line 1, after "A" the following text has been inserted ---harmonic---; in line 4, "an" has been replaced with the following text ---said---.

In claim 25, line 2, after "structure" the following text has been inserted ---, wherein the

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lower frequency modes are purely circumferential modes, said bell structure---; in line 7, "such as" has been replaced with the following text ---in a manner---; in line 8, "with lower frequency modes being purely circumferential modes" has been ---deleted---

### **Reasons for Allowance**

2. The following is an examiner's statement of reasons for allowance:

With reference to claims 15-21, the prior art of record does not disclose or clearly suggest a method for designing a bell shape for a bell having a plurality of modal frequencies, wherein the first three of said frequencies, at minimum, are substantially in a harmonic sequence, the method comprising the step of selecting the initial bell shape comprising choosing a starting geometry in which the lower frequency modes to be tuned by said optimization procedure are purely circumferential modes, in combination with the remaining limitations in the claims.

With reference to claim 22, the prior art of record does not disclose or clearly suggest an axisymmetric bell having a top portion, a side portion and a mouth, the side portion extending from the top portion to the mouth, meridonal cross-section of the side portion being substantially geometrically similar to a cross section having an outer line formed by fitting an arc of a circle to three points having rectangular coordinates  $x$ ,  $y$ , of the nodes set out in table 3, in combination with the remaining limitations in the claims.

With reference to claim 23, the prior art of record does not disclose or clearly suggest an axisymmetric bell having a top portion, a side portion and a mouth, the side portion extending from the top portion to the mouth, meridonal cross-section of the side portion being substantially geometrically similar to a cross section having an outer line formed by fitting an arc of a circle to two points having rectangular coordinates  $x$ ,  $y$ , of the nodes set out in table 6, in combination with the remaining limitations in the claims.

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With reference to claim 24, the prior art of record does not disclose or clearly suggest a harmonic bell having a plurality of modal frequencies comprised of means for producing the third frequency comprise choosing a starting geometry in which the lower frequency modes are purely circumferential modes, in combination with the remaining limitations in the claims.

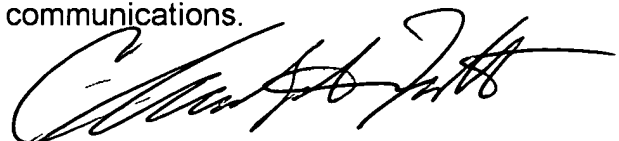
With reference to claims 2-13 & 25, the prior art of record does not disclose or clearly suggest a bell having a plurality of modal frequencies, the bell having a bell structure wherein the lower frequency modes are purely circumferential modes, said bell structure including optimal tuning means for producing a first three frequencies of the plurality of modal frequencies substantially in an harmonic sequence, in combination with the remaining limitations in the claims.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Travis M Reis (571) 272-2249; on M--F 8--5. If attempts to reach the examiner by telephone are unsuccessful, contact the examiner's supervisor, Diego Gutierrez (571) 272-2245. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306 for all communications.

Travis M Reis  
Examiner  
Art Unit 2859



Diego Gutierrez  
Supervisory Patent Examiner  
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tmr  
January 31, 2005

**CHRISTOPHER W. FULTON**  
**PRIMARY EXAMINER**